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PROGRESS REPORT # 5

NMC No. 0203 NAS 5-21772

1 April 1973

TITLE: To Develop a Land Use-Peak Runnoff Classification System for Highway Engineering Purposes.

PROBLEMS:

1. Two color composites ordered in the first week of November 1972 have not been received. The 9" x 9" B/W transparencies ordered five months ago have not been received to date.

2. Five color composites were ordered from the General Electric Photo Lab at Beltsville, Maryland, on 4 March 1972. Because of problems in the lab, GE personnel informed me that the composites would not be completed until 20 April.

ACCOMPLISHMENTS:

1. Attended the ERTS-1 Symposium in early March. During a 3-hour session using the I^2S equipment, 25 35 mm Ektachrome slides were made of two practically cloud-free scenes using various Band - Filter - Intensity combinations. The processed film was just received and several slides were especially good for classification of forested areas.

2. In the last week of this reporting period two days were spent at the University of Vermont using Principal Investigator Al Lind's Spectral Data equipment. About 80 slides were made of from ERTS scenes and one Vinten combination. The film is being processed at this writing. During the same trip a day was spent with Principal Investigator Bob Simpson at Dartmouth and Tom Marlar at CCREL to discuss ideas, instrumentation, techniques and analysis methodology relating to our respective studies. The aforementioned investigators have considerably more sophisticated equipment for the analysis of ERTS imagery than is available to the writer. Each of the Investigators has indicated that I could use their equipment for work

related to my proposals. I anticipate taking a 3 or 4-day trip to Vermont and New Hampshire every month or so to develop this mutual cooperation on sharing ideas and equipment.

3. Considerable interest has been exhibited in the ERTS program by a number of State of Maine agencies. Arrangements have been made with the Forestry Department, Department of Inland Fisheries and Game, Department of Sea and Shore Fisheries and the State Planning Commission to obtain ground truth and to assist in making field checks of interpretations made from both ERTS imagery and U-2 underflight photography.

4. A U-2 underflight covering a band about 50 miles wide along the Coast was obtained on 24 March. According to Pilot Knutson about 79% of the coverage was cloud-free.

5. Materials and equipment for "Diazo - Pickle Jar" method for producing color composites have been obtained and preliminary trials have been initiated.

PLANNED FOR NEXT PERIOD:

1. To analyze slides of I^2S and Spectral Data MSS composites taken at Goddard and University of Vermont.

2. Field check interpretations of land use mapping themes as identified on ERTS and U-2 products.

3. Cooperate with other State Agencies in disciplines not related directly to objectives outlined in this proposal or in NMC No. 1205.

4. To obtain additional slides of the University of Vermont Spectral Data screen for analysis.

5. If back ordered color composites are received from NASA or General Electric Photo Lab, a several day trip to the GEMS facility at Valley Forge, Pennsylvania, may be taken.

6. Produce several preliminary thematic maps of two local areas (200 or 300 square miles) relating to surficial waters and forest type classifications.

7. Continue exploration of Diazo methodology.

1

8. Obtain low altitude (scale 1: 60,000) 35 mm ClR and Color ground truth photography during the spring breakup, the period of seasonal high water.